

# Earth Island Journal

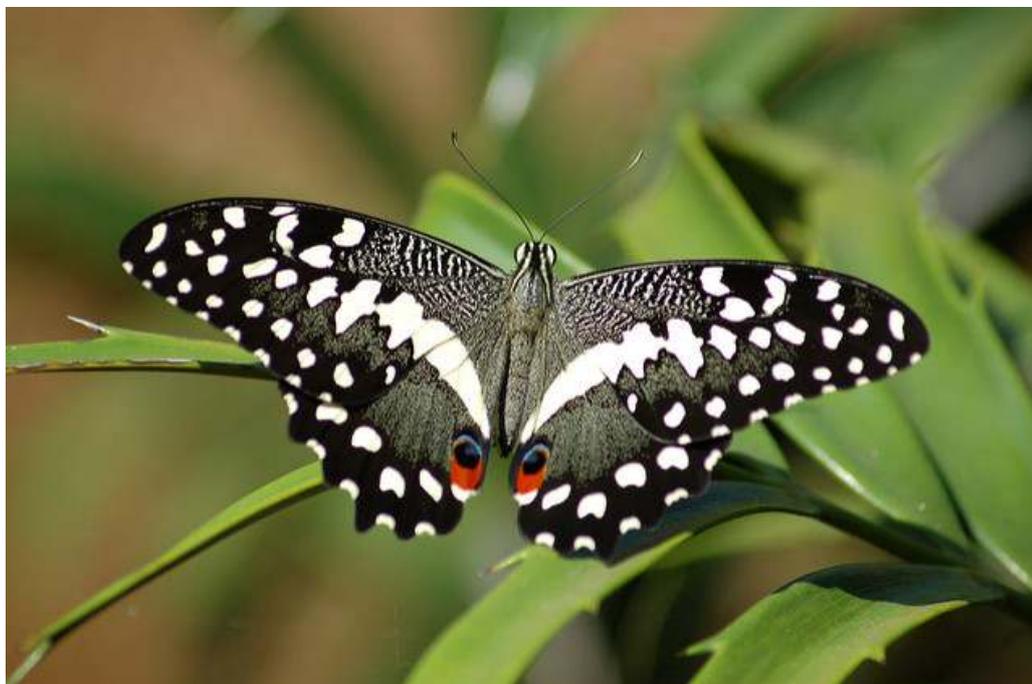
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## How Butterfly Farmers Are Safeguarding the Forest in Kenya

BY [BOB KOIGI](#) – JULY 18, 2016

### Community-based conservation project helps transform former loggers into forest advocates

An innovative community-based conservation project that was started more than 20 years ago near the Kenyan coast is paying off. Former illegal loggers are now embracing butterfly rearing as a conservation model, earning money from their butterfly enterprises while safeguarding Kenya's forest ecosystems.



*Photo by [Shever, on flickr](#)* In Kenya, former illegal loggers are earning money by breeding butterflies.

Coastal forests in East Africa once stretched from southern Somalia, through Kenya and Tanzania, and all the way south to Mozambique. However, these forestlands have long suffered from deforestation. Now,

Kenya's [Arabuko Sokoke](#) forest, which encompasses 42,000 hectares and is protected as a national forest reserve, represents the largest remaining block of coastal forest in the region.

Arabuko Sokoke is a treasure trove of endemic plants and animals, and is home to some of the most endangered species globally. More than 230 bird species live in the forest, among them rare species including the Clarke's weaver bird, Pemba sunbird, and Sokoke scops owl. Endangered mammals like the African golden cat, the African elephant, Ader's duiker, and bushy tailed Mongoose also live in the forest, as do 200 different butterfly species.

But the communities living around the forest have traditionally relied on it for their livelihood. From felling trees for sale to using timber for personal use, the communities for years played cat and mouse with the Kenyan government, which imposed a countrywide ban on logging in all public forests in 1999. Local conservationists, concerned about the impacts of illegal logging on this essential forest habitat, came up with an idea of creating nature based businesses like butterfly farming that would allow surrounding communities to transition to being forest protectors.

"We were losing the forest at a very fast rate," said Shariff Mwandawiro a local community leader who was among the first butterfly farmers and who conducts conservation trainings in the community. "Dozens of trucks would be packed right inside the forest every day. The sounds of power saws and falling trees never stopped. We had to look for a way to stop it. But it had to be more rewarding to the communities than what they were currently getting."

In 1993, with funding from the United Nations Development Programme, [Kipepeo butterfly project](#) was launched. (*Kipepeo* is Swahili for butterfly). The program involves introducing and training local communities in butterfly farming, monitoring activities to ensure sustainability of operations, and coordinating sales.

"We wanted the communities to own the project," Mwandawiro said. "We explained why it mattered to them to leave the forest and instead work on protecting it. We told them that it was their heritage and in no time, they would have nothing left to take pride in."

From an initial 150 members, 800 families have now found livelihoods in rearing and selling the butterflies.

This is how it works. The farmers capture the butterflies from the forests and place them in shade net cages, measuring on average two by four meters, with plants that they can feed on. Each farmer owns their own net cages, with some owning as many as ten cages. The cages are basic structures made of wood and surrounded with thin wire mesh or net curtain to ensure that there is no room for butterflies to escape. Small sticks are inserted inside the cages for butterflies to lay eggs on. (Butterflies lay between 1,000 and 2,000 eggs during their life.) After a few days, the eggs hatch and the caterpillars are placed in nurseries to feed on host plants until they develop into pupae.

At the pupae stage, farmers take the insects to Kipepeo center, which is located about a kilometer from most of the butterfly farms and acts as the collection site. Elected representatives, who include members of the community chosen by the butterfly rearing farmers and local government officials, manage the center and keep records of the number of pupae delivered by each farmer.

Here, the pupae are also sorted out, graded, and classified based on market demands. Classification involves consideration of the butterfly species, quality, and whether the pupae has been affected by diseases, and determines pricing for butterfly sales. The center buys 600 pupae each week. The pupae are later wrapped in cotton for protection and exported to six destinations, including locations in Europe and North America. To meet the export market requirements, the Kipepeo project pupae are shipped together with a copy of an export license, which is issued by the Kenya Wildlife Services. The remaining pupae are sold locally, mostly to the National Museum of Kenya, which has a live butterfly exhibit.

At the export markets, the pupae are sold for a variety of purposes, including live butterfly exhibits and private garden owners keen on increasing their exotic varieties. They are also used by fashion designers to inspire new clothing designs. In some countries the butterflies are released in weddings as part of the ceremony.

Kipepeo also places an emphasis on sustainability of operations. Scientists at the National Museums of Kenya's Center for Biodiversity, which is part of the Kipepeo project, carry monthly trainings with farmers on how to sustainably harvest the butterflies to ensure that they do not interfere with the wild butterfly populations. The museum officials also runs weekly monitoring exercises where they check the harvesting trends of farmers and their impact on butterfly population levels. Once butterflies hatch, farmers are supposed to release the original captured butterflies back to the forest.

Mohammed Marwa, who lives in Sokoke, a village next to the forest, has embraced the program. He eked a living selling timber for 10 years until the butterfly project was introduced. Like the majority of people in his community, he could not imagine a life outside the forest. Full of skepticism, he decided to give it a try. On his first butterfly sale, he earned \$150. When he was logging, he could earn on average \$100 a month.

“It supplemented the income I was earning from my cereal farming,” Marwa said. “I found it interesting that it wasn’t a straining job and it was bringing good money. I talked to my wife about it and we are now full time butterfly farmers. I never imagined that I could shift from felling at least 10 trees a day inside the forest to rearing butterflies and protecting the same forest I actively participated in harming. But in the end I think it was worth it.”

He now earns about \$400 each month.

But the project hasn’t been without hiccups. For starters, markets for the butterflies are seasonal, so farmers can’t always make a consistent living month-to-month, and at times, butterfly supply is greater than demand. The butterfly populations are also vulnerable to changing weather, diseases, and pests.

“We are looking at more ways of diversifying the income for the surrounding community, like honey harvesting,” Yussuf Kioma, a research scientist involved in the project, said.

Some concerns have also been raised regarding the impact of releasing butterflies in non-native ecosystems. When it comes to butterfly houses, many countries have instituted measures to ensure that the houses meet requirements to prevent butterfly escapes. In the US, for example, any building plans for butterfly displays must be approved by The Department of Agriculture. Requirements include having double doors and fans at strategic positions to blow butterflies away from exits.

Releases at special events like weddings might be more problematic. “There have been varied arguments [about] the environmental impacts of releasing butterflies in alien ecosystems, whether they would survive, and the resultant environmental impact,” said Casper Mudimba, an entomologist from the University of Nairobi. “Besides interfering with studies of butterfly migration and distribution, introduction of non-native species leads to inappropriate genetic mixing of different populations with even a higher possibility of spreading diseases. The idea of releasing

butterflies should be banned because it raises serious issues that have never been conclusively dealt with,”

Despite these challenges, the Kipepeo project has gained global attention, winning numerous awards including the Dubai International Award for Best Practices to Improve the Living Environment, presented by the United Nations Habitat program and the Dubai Municipality. It has been modeled as a classic way of diversifying income for vulnerable communities and insulating them from environmental and economic shocks.

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